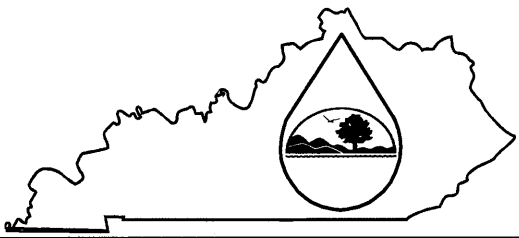
KPDES FORM SDAA



Kentucky Pollutant Discharge Elimination System (KPDES)

Socioeconomic Demonstration and Alternatives Analysis

The Antidegradation Implementation Procedure found in 401 KAR 10:030, Section 1(3)(b)3 requires KPDES permit applications for new or expanded discharges to waters categorized as "Exceptional or High Quality Waters" to conduct a socioeconomic demonstration and alternatives analysis to justify the necessity of lowering local water quality to accommodate important economic or social development in the area in which the water is located. This demonstration shall include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation

I. Project Information

Facility Name: Kathleen Deep Mine (KY DNR Permit # 860-5312)

Location: near Topmost, Kentucky

County: Knott

Receiving Waters Impacted: Right Fork Beaver Creek

II. Socioeconomic Demonstration

1. Define the boundaries of the affected community:
(Specify the geographic region the proposed project is expected to affect. Include name all cities, towns, and counties. This geographic region must include the proposed receiving water.)

Reference the attached narrative

2. The effect on employment in the affected community:
(Compare current unemployment rates in the affected community to current state and national unemployment rates. Discuss how the proposed project will positively or negatively impact those rates, including quantifying the number of jobs created and/or continued and the quality of those jobs.)

Reference the attached narrative

II. Socioeconomic Demonstration- continued

3. The effect on median household income levels in the affected community:
(Compare current median household income levels with projected median household income levels. Discuss how proposed project will positively or negatively impact the median household income in the affected community including the number of households expected to be impacted within the affected community.)

Reference the attached narrative

4. The effect on tax revenues of the affected community:
(Compare current tax revenues of the affected community with the projected increase in tax revenues generated by the proposed project. Discuss the positive and negative social and economic impacts on the affected community by the projected increase.)

Reference the attached narrative

II. Socioeconomic Demonstration- continued

5. The effect on an existing environmental or public health in affected community:
(Discuss how the proposed project will have a positive or negative impact on an existing environmental or public health.)

Reference the attached narrative

6. Discuss any other economic or social benefit to the affected community:
(Discuss any positive or negative impact on the economy of the affected community including direct and or indirect benefits that could occur as a result of the project. Discuss any positive or negative impact on the social benefits to the community including direct and indirect benefits that could occur as a result of the project.)

Reference the attached narrative

III. Alternative Analysis

1. Pollution prevention measures:
(Discuss the pollution prevention measures evaluated including the feasibility of those measures and the cost. Measures to be addressed include but are not limited to changes in processes, source reductions or substitution with less toxic substances. Indicate which measures are to be implemented.)

Reference the attached narrative

2. The use of best management practices to minimize impacts:
(Discuss the consideration and use of best management practices that will assist in minimizing impacts to water quality from the proposed permitted activity.)

Reference the attached narrative

3. Recycle or reuse of wastewater, waste by-products, or production materials and fluids:
(Discuss the potential recycle or reuse opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

Reference the attached narrative

III. Alternative Analysis - continued

4. Application of water conversation methods:
(Discuss the potential water conservation opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

Reference the attached narrative

5 Alternative or enhanced treatment technology:
(Compare feasibility and costs of proposed treatment with the feasibility and costs of alternative or enhanced treatment technologies that may result in more complete pollutant removal. Describe each candidate technology including the efficiency and reliability in pollutant removal and the capital and operational costs to implement those candidate technologies. Justify the selection of the proposed treatment technology.)

Reference the attached narrative

III. Alternative Analysis - continued

6. Improved operation and maintenance of existing treatment systems:
(Discuss improvements in the operation and maintenance of any available existing treatment system that could accept the wastewater. Compare the feasibility and costs of improving an existing system with the feasibility and cost of the proposed treatment system.)

Reference the attached narrative

7. Seasonal or controlled discharge options:
(Discuss the potential of retaining generated wastewaters for controlled releases under optimal conditions, i.e. during periods when the receiving water has greater assimilative capacity. Compare the feasibility and cost of such a management technique with the feasibility and cost of the proposed treatment system.)

Reference the attached narrative

III. Alternative Analysis - continued

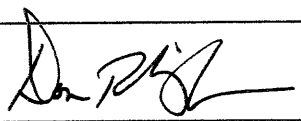
8 Land application or infiltration or disposal via an Underground Injection Control Well
(Discuss the potential of utilizing a spray field or an Underground Injection Control Well for shallow or deep well disposal. Compare the feasibility and costs of such treatment techniques with the feasibility and costs of .proposed treatment system.)

Reference Attachment_8

9 Discharge to other treatment systems
(Discuss the availability of either public or private treatments systems with sufficient hydrologic capacity and sophistication to treat the wastewaters generated by this project. Compare the feasibility and costs of such options with the feasibility and costs of the proposed treatment system.)

Reference Attachment_9

IV Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Title:	**Don R. Gibson** (Director, Permitting & Regulatory Affairs – KY)	**Telephone No.:**	(606) 439-0946
Signature:		**Date:**	9-10-09

Section II. – Socioeconomic Demonstration

1.) The permittee is proposing a deep mine in the Elkhorn #3 coal seam. The proposed operation will be located near the community of Topmost in Knott County, Kentucky. The proposed operation will be confined to a small region since the operation will mostly involve underground mining. The small surface disturbance related to the operation will be limited to an unnamed tributary that discharges into the Right Fork of Beaver Creek. The proposed deep mine permit boundary will encompass approximately 1,650 acres of the Elkhorn #3 coal seam and the surface disturbance associated with the face-up construction is approximately 6 acres.

2.) The current unemployment rate for Knott County, Kentucky is 10.7% as compared to the state unemployment of 10.5%. The current unemployment rate for the nation is 9.1%. These numbers are based on the Kentucky Office of Employment and Training, Research and Statistics Branch, Local Area Unemployment Statistics Section – May 2009. Based on the current slumping economic market, any introduction of jobs in the local area will be a positive impact to the local economy. The proposed deep mine will employee approximately 30 personnel to maintain the mine site for approximately ten (10) years. These 30 jobs are currently employed personnel of the permittee. They are currently working at a different mine site that is in the process of being completed, reclaimed, and abandoned. The construction of the new mine site will enable the current employment of their personnel. In addition to those 30 employed workers, ancillary positions, such as, drivers, vendors, and suppliers will also be needed by the applicant.

However, if for any reason the construction of the new mine site is not approved due to the various required permits by the end of 2009, the mine site will not be able to begin based on the scheduled financial plan of the permittee which projected this mine to be in operation by fall of 2009. If the mine site is not under construction by that time frame, the money will be lost and the mine site project will be abandoned which would ultimately result in the unemployment of the 30 employees of the applicant. The transfer of the employees from a different mine site may on the surface seems unlikely to benefit the local economy. But, those employees will still introduce money to the local economy by eating at local restaurants and buy fuel from the local gas stations and quick fuel marts. As with any company, personnel may change which would open opportunities for the local residents to be employed by the applicant. If the coal market begins to expand again, the applicant may employee more workers to help meet the demand for the coal market orders that feeds the power plants to provide our power and energy to sustain life.

3.) Based on the US Census Bureau for 2007, the median household income for Knott County is $27,999 as compared to the state and nation respectively, $40,299 and $50,740. Based on the provided income levels, the proposed operation will positively impact the local community and business. The anticipated median income for the miners is approximately $50,000/year as compared to the average median income of $27,999 which would substantial increase the local economy and workers. As discussed above, there will be approximately 30 workers/households that will be affected by the deep mine in the area. Also the need of ancillary positions, such as, drivers, vendors, and suppliers will also benefit the local economy. The number of households affected by the ancillary positions is hard to predict not knowing the skill and education of the local residents; however, there are approximately 300 plus

households along the perimeter of the proposed permit boundary. If would seem certain of those 300, some of those ancillary positions could possibly filled by the local residents.

4.) Currently the main tax revenue regarding coal mining would be the coal tax severance for the leading coal counties in Kentucky. Knott County is one of the leading counties that would serve to gain from more coal being produced in their community and county. Based on 2007 numbers, Knott County's Gross Value of Severed Coal is $362,886,771 (coaleducation.org). This would place Knott County in the top five of the leading coal producing counties. The local communities and county at large would only benefit from another producing operation. The money generated from the coal severance tax goes back into the communities to repair roads, better education, etc. Currently the Kentucky severance tax is 4.5% of sales.

Also the Imposition of Coal Excise Tax based on Section 4121 of the Internal Revenue Code imposes an excise tax on domestically produced coal. There are two different tax rates based on the method of coal removal. Since this is a deep mine producing operation, the excise tax will be $1.10/ton of coal produced. The taxes collected from the coal being produced are deposited to the Black Lung Disability Trust Fund to finance payments of black lung benefits to afflicted miners.

There is a reclamation tax that is applied to the amount of coal that is removed from the mine. That rate is $0.35/ton of coal that is produced.

These numbers are based on coal currently being priced at $50/ton and the estimated coal to be produced from the life of the deep mine to be 3,953,070 tons.

Federal Excise Tax at $1.10/ ton	=	$4,348,377
Reclamation Tax at $0.35/ton	=	$1,383,575
KY Severance Tax at 4.5% sales	=	$8,894,408

The numbers generated from the proposed mine site will produce a small increase in the tax generated numbers. This proposed deep mine is replacing another deep mine that is in the process of being reclaimed and abandoned because the life of the mine site is exhausted. However, the proposed deep mine is replacing a smaller coal producing mine which will stimulate the generated taxes with an increase in production of coal from the local area.

Additional social and economic impacts on the affected communities by the proposed deep mine will be related to the preventing an increase in the jobless rate and the positive return to the community in way of state and federal taxes. Based on the salary of $50,000 per year per household, the federal income tax paid per person will be approximately $2,700. The estimated payroll taxes and social security paid per person would be $6,000 and Medicare estimated at $1,500.

The only negative impact would if the proposed deep mine project is not started as scheduled. If the project fails to start and is abandoned, the negative impact would be the loss of the proposed incomes and stimulated local economy by the deep mine site.

5.) The negative environmental impacts as a result of the deep mining operation will be minimal and restricted to a small area (less than 6 acres). Since the deep mine operation will consist of

a face-up, temporary fill, and sediment structures the impacts will be mostly related to the affected unimproved intermittent stream. The permittee is actively pursuing an Army Corp permit to allow mining in such stream. The initial impact may seem negative but the overall impact will be positive once mining will be completed. The permittee will be required to repair the affected stream as required by the Division of Mine Permits. The permittee will replace/repair the stream to equal or better quality than the pre-mining condition of the stream. Once the temporary fill is removed to reclaim the face up area, the stream will be reconstructed to approximate the original stream however with improved benefits. The existing stream is an unimproved stream that has been deteriorated by previous mining, logging, gas well activities, and local residents dumping their trash into the local hill side that gathers in the stream reducing the aquatic life. Once the mining has been completed and the mine site is ready to be reclaimed, the permittee will remove the temporary fill to reclaim the deep mine face up. Once the material is removed, the permittee will replace the stream to approximate the original stream in size and function. After reclamation, the stream will be reconstructed with logs and various rock sizes that enhances the aquatic life that was previous missing from the unimproved stream. Once the area is seeded and the aquatic life begins to emerge, other native animals such as deer and squirrels will begin to repopulate the area.

In years past mining operations would at times cause dust problems to the surrounding environment. This was more related to surface mining activities more so than deep mining activities. The dust associated with a deep mine is due the coal trucks entering and leaving the mine site. However, since the early years of mining and haulage of coal with large trucks, the state has implemented laws and regulations regarding the dust related to the mine sites. The permittee will follow the detailed dust fugitive control plan outline in the Division of Mine Permits MPA-03 Item 33 forms. With these regulations in place the control of dust at the mine site will be greatly reduced which will in turn produce a more clean air to the surrounding area avoiding any public health problems.

6.) The majority of the economic impacts will be related to the actual coal production and the results of the coal tax benefits as discussed in Item 4. However, due the large company that is the ICG organization, they bring a multiplier effect to the local area. ICG is willing to invest their time and money to this deep mine project which in effect multiplies out to the local community in a positive way. As discussed regarding income and the tax generation, also the permittee brings a social awareness regarding the effect of their work to the environment. The permittee is well aware of other companies' recklessness towards the environment with their mining methodology, however with voluntary input and awareness of the adjacent states mining problems, the permittee wants to promote a positive successful mining operation to the local community that will benefit all that is associated with it.

Section III. – Alternative Analysis

1.) The proposed deep mine operation would propose two (2) potential pollution problems. The first being a dust potential that would be related to the heavy vehicles traveling over the haul road from the main public access to the face up area. The second potential pollution problem would be related to the noise of the vehicles and the machinery located at the mine site.

The possible dust pollution preventive measures have been evaluated. As discussed above

the majority of the dust pollution will be related to the vehicular traffic on the haul road from the stockpile area to the public access road. One of the options to prevent dust would be to either pave or concrete the proposed haul road. The cost of pavement vs. concrete is as followed:

Road Length = 1,700 feet (0.3 miles)

Road Width = 50 feet

DGA Roadbed Thickness = 2.0 feet

Thickness of material = 1.0 feet

Current Cost of Concrete per cubic yard = $95/cubic yard

Current Cost of Pavement per ton = $90/ton

Current Cost of DGA = $450/ton

Concrete + DGA:

Concrete = (1,700 ft. x 50 ft. x 1 ft.)/27 = 3,148 cubic yards

3,148 cubic yards @ $95/cubic yard = $299,060

DGA = (1,700 x 50 ft. x 2 ft.) = 170,000 cubic feet converts to 12,750 tons

12,750 tons @ $350/ton = $4,462,500

Total concrete cost = $4,462,500 + $299,060 = *$4,761,560*

Pavement + DGA:

Pavement Area = (1,700 ft. x 50 ft.)/9 = 9,444 square yards

12 inches in a foot with density of pavement @ 110 in/lbs

[9,444 x (12 x 110)]/2000 = 6,233 tons @ $90/ton = $560,970

Pavement + DGA amount (same as above) = *$5,023,470*

As seen the cost to either pave or concrete the road is extremely expensive and the economic cost would make the deep mine not feasible. The dust potential will be addressed and controlled as the Department of Mine Permits (DMP) requires and addressed in the full application submitted to the DMP. The permittee has a large wheeled vehicle that is capable of cleaning the road via sweeper and/or vacuum when the road needs cleaning.

The second potential pollution is related to the noise from the mine site. One option would be

to enclose the permitted area with a large fence with noise damping capability. The perimeter length is approximately 3,600 LF (0.68 miles). To construct a 24 feet high noise dampening wall is estimated at:

Length = 3,600 LF

Height = 24 feet

Cost of $2700 per 30 feet section

3,600/30 = 120 sections @ $2,700 = $324,000

Required steel ties = $2 per section = $2 x 120 = $240

Concrete required for posts = 120 posts @ 3 feet deep and 1 feet diameter

Concrete = (3 ft. x 0.785 ft^2) / 27 = 0.10 cubic yard

120 posts x 0.10 x $95/cubic yard = $1,140

Labor to Install by local contractor = 3 man crew at $200/hr @ 8 hours days x 30 days

$200 x 8 hrs x 30 days = $48,000 plus rental equipment @ $20,000 for 30 days

Total cost = *$393,380*

As seen above the cost of the fence is high and also the site of a 24 feet high wall would be unaesthetic to the surrounding. However, since the proposed mine site is located in semi secluded hollow, the impacts of the possible pollution hazards are very minimal.

2.) The permittee will implement Best Management Practices (BMP) where feasible. The Division of Mine Permits recommends several BMP's for applicants to utilize to minimize the effects of the proposed mining to the environment. Some of the BMP's that are proposed but not limited to are:

Basins
Diversion Ditches
Filter Strips
Land Grading and reshaping
Minimization of surface disturbance
Placement of Rip-Rap
Rock Check Dams
Silt Fences
Straw bales barriers
Work in periods of no or low flow or dry weather

ICG Knott County, LLC (ICG) is proposing General Permit coverage for this permit for the following reasons:

Normal operating procedures that are incorporated when constructing deep mine face ups include placing straw bales in the stream prior to constructing a single stream pond. The straw bales are maintained only until the construction is completed. Ponds are designed to provide an effluent limit not to exceed 0.50 mg/L. However, due to normally constrained conditions, the effluent limit is normally designed to be very near the maximum limit.

For this particular instance, ICG proposes to take additional precautions to ensure that the main stream in this area, which is the Right Fork of Beaver Creek is not adversely affected. Those additional precautions are outlined in the following "Enhanced BMP".

ENHANCED BMP

The permittee is offering an enhanced BMP plan to be implemented at the Kathleen Deep Mine Site (KY DMP #860-5312) to further ensure that the discharge from the mine site will not significantly add or change the existing conditions of the surrounding environment.
The surface area affected by this permit is limited to 5.6 acres including 1.85 acres of access roads. The small size of the area affected in addition to the location of the ponds will aid in protection of the stream. Further, any slope areas that are created will be immediately revegetated and the flat areas to be utilized as mine yard and/or equipment storage areas will be promptly covered with limestone gravel surfaces.
The permittee has explored the possibility of moving ponds further up-stream; however that is not a feasible option. However, both sediment structures SS-1 and SS-2 have been placed in the most practical area to minimize the effects construction while maximizing the efficiency of the proposed sediment structures. Both sediment structures were designed to be constructed out of stream as to minimize the impact to the local stream. Pond SS-2 was designed and utilized upstream to reduce the effluent discharge. The DMP required effluent limit must be 0.50 mg/L or less; however with the upper pond modeled in series, SS-1's effluent discharge for the small watershed is 0.13 mg/L. This effluent value indicates a very low sediment percentage as part of the overall discharge from the sediment structure.
The placement and use of the two sediment structures will ensure that the premining and during mining discharge from the watershed will virtually be unaffected. The premining discharge for the unnamed watershed is 156.57 cfs (cubic feet/sec) as compared to the during-mining discharge of 158.08 cfs. The during-mining discharge has increased only than 1% of the premining discharge. Also, the effluent from the lower pond SS-1 discharges to an unnamed and unimproved tributary of the Right Fork of Beaver Creek. Flow from the pond will travel along the unnamed tributary for approximately 550 feet before entering the Right Fork of Beaver Creek.
In addition to the above discussed sediment structures benefits, the permittee will install baffles in the ponds to increase the travel time from inlet to the outlet of each pond. These baffles will essentially reduce the flow between the outlets to increase the sediment fallout. The baffles are not modeled in the SEDCAD program; therefore the introduction of baffles to the ponds would only enhance the efficiency of the ponds. The permittee will also construct energy dissipaters and other rock check dams between the two ponds where practicable, also

reducing the flow between the routing of the sediment structures.
Where possible, the ditches between the ponds will be rock lined. The permittee will also place straw bale dikes below the lowest pond to filter the discharged water further than required by DMP regulations. Under normal conditions, the pond would be dipped once the sediment level reached an elevation 1foot below the principal spillway. Under this Enhanced BMP, the pond will be dipped on a more conservative basis thus preventing the possibility of releasing increased amounts of sediment into the Right Fork of Beaver Creek.

3.) There is not a processing facility proposed with this deep mine permit. The permittee does not anticipate that the wastewater will be generated at the mine site. The stormwater runoff collected in the sediment structures may be use for dust suppression in the underground operations with the continuous miner. This requires 10-15 gallons/min of water consumption to maintain the equipment in use. Assuming a flow rate of 2.5 cfs from the Right Fork of Beaver Creek the discharge rate is more than 78 million cubic feet per year and the amount required for dust suppression is less than 2% of the total. Another 1,500 gallons per day for the dust control of the roads which is still less than 1% of the daily flow. Also the water may be used too during the hydroseeding process but that amount is very minimal. Water cannot be reused for land applications on slopes that are greater than 6% and the surrounding site is greater than the 6% cutoff. The sediment structures will serve as alternative water sources for the underground operations and dust control on the roads. The use of this water will conserve stream water at all times and which is critical since the local stream is intermittent.

4.) Typical water usage at a deep mine operation would be the use by the employees at the mine office and also the watering of the haul/access road and the continuous miner for the deep mine operations. As discussed above the usage of the water at the deep mine site is approximately 1,500 gallons of water required a day for dust control of the roads and another 10-15 gallons/min of water required for the continuous miner to be used in the mining operations. Estimating that the continuous miner to be in used 2 of 3 mine shifts which would be 16 hours. Average usage of 12.5 gallons/minute would result in a water demand of 12,000 gallons a day plus the 1,500 gallons for the road for a total of 13,500 gallons to used every day at the mine site. Typical cost to retrieve water from a hydrant is $6 per 1,000 gallons of water. Also the cost of a storage tank of that size is estimated at $25,000. That would result in a cost of $320,650 for the life expectance of the deep mine operation. If the permittee has to allot that amount of cost for water consumption then the permittee would have to remove that cost somewhere else in their budget for the deep mine site. The first place the permittee would look at in removing cost would be either personnel or eliminating some of the ancillary people in the local community.

The other most cost effective and water conservation friendly option is the use of the proposed sediment structures as the means of water source. The use of the sediment structures eliminates the use of the local stream especially during dry flow periods. The materials used for the construction of the sediment structures are the earthen material at the site which blends with the surrounding environment. The cost to construct a sediment structure is approximately $10,000 per sediment structure for a total of $20,000 as compared to the $320,650 for the daily bought water.

5.) Based on similar projects for the permittee in the same county, alternative analysis are very similar for deep mine operations for each mine site for the permittee. Since they are under the umbrella of the same company, their daily operations from mine site to mine site are very similar.

Surface mining was considered as an alternative to under mining. However, the 1,650 acres for the proposed underground mining cannot be surfaced mined for several reasons. (1) The roads, electric lines, gas wells, streams, and cemeteries are located on the proposed surface area (2) The mining company does not have the rights to all the surface area (3) The economic ratio of overburden to coal cannot be met over the large proposed surface area (4) And surface disturbance to 1,650 acres would be detrimental to the environment and wildlife habitats.

There are some wastewater treatment options currently available for the treatment and removal of settable solids from the stream to meet effluent requirements. These include reverse osmosis filtration, a system of thickeners and vacuum filters, sedimentation boxes, sedimentation ponds, sediment ditches, filter fabrics, straw bales, etc. Diversion ditches, sediment fence, and/or sediment structures are generally the methods of choice when following the regulatory and industry BMPs.

Wastewater treatment plant software was used to estimate similar deep mines for the permittee and those same costs have been applied to this application. Using only a preliminary treatment process (mechanical screening) since the discharge is stormwater and solids are the primary pollutant of concern, the project cost would be $14.2 million which includes the engineering design fee ($1.5M), lab and administration building ($1.7M), interest during construction ($1.1M), total labor costs of $140,000/year, maintenance costs of $14,000 year, energy costs of $5,000/year, and etc. The software did not allow cost estimation for WWTP removal but an allowance of 10% of the total project cost should be added for deconstruction. The cost of this alternative is prohibitive.

The most cost effective treatment on site for the surface runoff is the required DMP sediment structures. The DMP requires that all surface runoff within the permit boundary be controlled by diversion ditches and sediment structures which have to retain the surface runoff water from the mine site until it reaches the required effluent of 0.50 mg/L or less. A computer software program called SEDCAD aids in the design and sizing of the sediment structures. Typically the water that is discharged from these sediment structures does not have any type of domestic use. The only use as discussed above is using the water to control dust and in some cases landowners, typically farming related, may use the water for their live stocks.

6.) There are no existing treatment facilities to upgrade near the immediate area of the deep mine area. The nearest known wastewater treatment facility is near Carr Fork Lake which is approximately 32 miles from the project site. Even if the existing WTP could be upgraded to handle the proposed discharge from the mine site, the cost of either constructing pipe for 32 miles and/or hauling the discharge the 32 miles to the WTP.

The total length across the 32 miles is 168,960 feet. The current cost for pipe to carry the

wastewater is approximately $100/LF which would equate to $16,896,000 dollars for the pipe material alone not including the labor cost and the money to obtain easements from all the landowners affected along that 32 miles of road is uneconomical.

The capacity of a typical water truck ($100,000) that could be use for the haulage of the wastewater is 4,000 gallons. The estimated truck mileage rate is 10 miles/gallon with gas currently at $2.40/gallon. The round trip for the truck to the WTP and back is 64 miles. The deep mine site would discharge approximately 20,000 gallons a day. That would equate to 5 trips a day at 64 miles would be 320 miles a day. That would be 32 gallons a day at $2.40/gallon for a total of $77/day for 10 years would be $280,320 not including maintenance to the truck or if the truck would need to be replaced. Adding the cost of the truck and the haulage rate the total of this option would be $380,320 which is not feasible for the project.

7.) As required by DMP, the permittee is required to construct water retaining detention structure(s) to control the sediment load and surface runoff discharge to the surrounding area. The sediment structures are sized and designed as such to control the discharge via straight pipes and/or emergency spillways to allow for enough settling time for the sediment solids to settle out before discharge. The discharge rate is dictated by the designed spillways. The release of the water is maintained by nature itself verses some mechanical release. These ponds are designed to maintain a 10 year/24 hour storm event. Even for a small area as this deep mine area the lowest pond holds approximately 0.22 acre-ft of runoff. The proposed structures associated with this permit will be constructed in solid material to avoid any failure in the dam to ensure safety downstream. Other above ground sediment structures have the possibility of failure which could cause a sudden release of water to the residents downstream of the project area. If permittee had to construct sediment structures to maintain even more water on site to hold the required amount per day, the size of these structures would probably triple in size which would introduce construction of the dam structures on the surface of the ground. This would open the possibility of dam failure. Also, the permittee does not have the area to construct those large holding ponds in the small watershed. Also the enlargement of the ponds would disturb more area and also affect more of the stream. The whole purpose of the deep mine option was minimize the surface disturbance. The cost of the construction of the ponds would not be such an important factor as compared to the public safety at large and the environmental impacts to the land for needing larger retention ponds.

8.) There are several old deep mine works that are abandoned near the project site that could be used for subsurface injection. All together the old abandoned deep mines covers approximately 234 acres. Assuming a 60% recovery and four (4) feet void height, the void volume in these old mine works is 562 acre-ft. Assuming a flow rate of 2.5 cfs from Right Fork of Beaver Creek, the discharge is more than 78 million cubic feet per year. Even if 25% of this flow infiltrates upon subsurface injection, 59 million cubic feet remain with an equivalent volume of 1,357 acre-ft which is 2.4 times more per year than the old mine works could contain. This option of disposal would be more cost effective verses construction of on site water treatment plant as discussed in Item 5, but the project area does not have enough storage to maintain the required volume; therefore, making this option not viable.

9.) The nearest known wastewater treatment facility is near Carr Fork Lake. The approximate distance from the mine site to Carr Fork Lake is approximately 32 miles. The total length

across the 32 miles is 168,960 feet. The current cost for pipe to carry the wastewater is approximately $100/LF which would equate to $16,896,000 dollars for the pipe material alone not including the labor cost and the money to obtain easements from all the landowners affected along that 32 miles of road. The capacity of a typical water truck ($100,000) that could be use for the haulage of the wastewater is 4,000 gallons. The estimated truck mileage rate is 10 miles/gallon with gas currently at $2.40/gallon. The round trip for the truck to the WTP and back is 64 miles. The deep mine site would discharge approximately 20,000 gallons a day. That would equate to 5 trips a day a 64 miles would be 320 miles a day. That would be 32 gallons a day at $2.40/gallon for a total of $77/day for 10 years would be $280,320 not including maintenance to the truck or if the truck would need to be replaced. Adding the cost of the truck and the haulage rate the total of this option would be $380,320 which is not feasible for the project.